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Meteorologiya i Gidrologiya, No 5, 1948, pp 82-86.

A NEW METEOROLOGICAL METHOD TO AID RAILROAD CONSTRUCTION IN ASIATIC USSR

S. M. Fleyshman

The author has developed a method for determining the shower intensity factor which promises to be of great assistance in railroad construction in the Asiatic USSR. The lack of methods by which data on diurnal precipitation could be reduced to data on shower intensity has hitherto been an important drawback in designing spans of constructions for new railroad trunk lines in the USSR, since the shower intensity is a most important factor in this design.

The problem of determining shower intensity does not exist in the European USSR, since 80% of the 627 stations producing continuous shower records are located in this area. Unfortunately, however, most new railroads are being and will be constructed in the eastern regions and particularly in the Asiatic USSR where the network of stations producing shower records is very thin; only 20-30 such ste ions exist in all of the vast territory of Siberia, the Urals, Kazakhstan, and Central Asia. For example, in the area bounded by the 42d and 66th meridians and the 60th and 88th parallels, i.e., an area of one million square kilometers there are only two stations producing shower observations, Pil'va and Oksino, and even these have only been operating for a short time.

Precipitation data is much more plentiful, since the network of pluviometric posts is considerably thicker; for example, in processing data on diurnal maxima, the Main Geophysics Observatory uses the observations of 10,424 stations, including 2,770 in the Asiatic USSR. The observation periods are also more satisfactory; of these 10,000-odd stations, several hundred have observation periods of 25-30 years, and more than 100 have periods approximating a century. The author developed a method for converting the data on diurnal precipitation maxima to figures on shower intensity which are reliable enough to be used in railroad construction.

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